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IVAN 'IRONMAN' STEWART'S

SUPER OFF ROAD™

STRAP ON YOUR HELMET, GRIT YOUR TEETH &
PREPARE TO MASTER MUD HEAVEN WITH
IVAN 'IRONMAN'
STEWART'S
SUPER OFF-ROAD

INSTRUCTION MANUAL

SUPER OFF-ROAD

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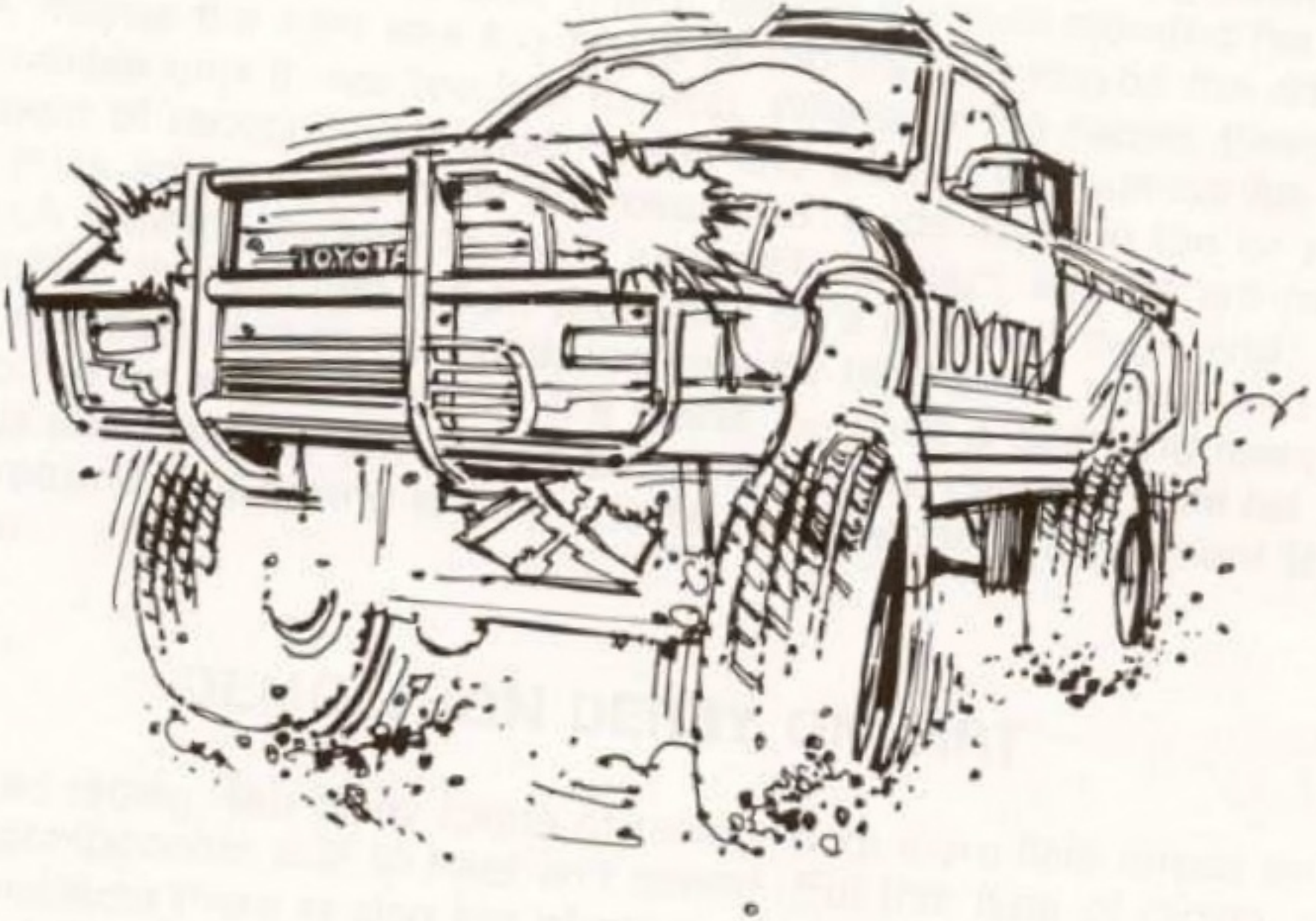

INTRODUCTION

The terrain is a ragged jumble of rocks, dirt piles, ditches and sandy ravines—but that doesn't matter. Light, quick and agile, race trucks accelerate forward at astonishing speed, skittering lightly across the obstacles. The biggest obstacles they drive around, cornering hard—sometimes on two wheels—to barely avoid the largest dirt banks and gullies. Hit these and a truck would fly out of control; miss them and it continues on, dodging in and out, the driver reading the ever-changing terrain as it unfurls before the truck.

That's what it's like to drive an off-road race truck. The course winds around twisting back against itself, and with no time to think, instinct takes over. Drivers must simply read and react, and try to keep up the pace. But staying out of trouble is nearly impossible over the course of the day's racing.

Trouble comes when a driver comes too rapidly upon a big ditch or large rock with no time to slow down. Maybe the dust clouded his vision, maybe the light was too bright or too dark, or maybe the ditch was invisible until it was too late to stop. Whatever the cause, there is a moment of recognition, sudden panic and then, a wild tumble follows. Truck and occupants fly end over end, fluids spray in the air as the truck tumbles through the sky. Incredibly enough, injuries are rare. More often, the stunned driver, protected by a stout roll cage and safety harness, shakes his head, reaches for the "start" button and tries to fire his engine back up. If it starts, he finds a gear and roars off—this time, looking way ahead and driving more carefully until his nerve returns. But driving is only one factor in winning. Equipment is another.

DEMOLITION DERBY ON DIRT

Off-road racing, like many forms of racing, puts incredible stress on vehicle components due to heat and speed. But this type of racing differs because there is also the physical wear and tear that accumulates from flying rock, from hitting large objects and from making contact with other trucks.

Tires wear out in less than an hour of racing, because every rock takes a little piece out of the tread. Shocks pump so fast they heat up, boil their internal fluids and lose their damping power, leaving the

driver to cope with a fading suspension as he races over rough terrain.

Engines, revved to the limit at one point, laboring hard in slow going at another, are constantly at risk of overheating. Dirt and mud can clog radiators, preventing cooling, and there is always the risk of physical damage to the radiator hoses. Clutches and transmissions can burn up as they try to keep up with an engine that revs to 11,000 rpm. The fenders and body pieces of a race truck frequently are torn loose from impact with obstacles of other trucks. Other high precision parts such as brake discs and drive shafts are also subject to this continual bombardment of debris. Winners are often those who, by skill or luck, weren't disabled by a piece of flying rock or another driver. Rarely are trucks knocked out by rolling or crashing. More often, they are simply shaken to pieces.

The modern racetruck is really a custom supertruck built to handle all the challenges of off-road racing.

The suspension technology is unique. Large radial tires are attached to cantilever torsion bar systems that will absorb nearly everything a driver might hit. With perhaps 25 inches of free travel, the suspension moves easily up and down, leaving the chassis level and steady at all but the highest speeds. Shocks are huge, gas-charged units with remote reservoirs that cool overheated fluids as needed. They are mounted in protected locations to prevent contact with flying rock and debris. A race truck will have 12 to 16 custom made shocks, and each may cost a thousand dollars or more to develop and install. Every year radical new designs are attempted. If they prove strong enough, a new design might provide a considerable advantage, so truck builders spare no expense. Suspension technology has been advancing so rapidly in the last five years, that a truck even one or two seasons old is obsolete.

Engines are frequently similar to those found in road race cars. Technological showpieces, they commonly feature aluminum blocks, double overhead cams, four valves per cylinder and exotic fuel delivery systems. Cooling is accomplished by mounting the radiator in the bed with a large electric fan blowing air through it. This keeps dirt from clogging the radiator fins and provides consistent air flow. Other coolers—for the oil, the transmission fluid and for the shock fluids—are also mounted in the bed or high on the roll bars to minimize damage.

Running gear—axles, transmissions, driveshafts and the like—are built to be strong, light and durable. All of these pieces will be

fastened together with superstrong hardware designed for use on aircraft. Exotic alloys and carbon fiber construction is the norm, and the cost is high.

As in other forms of racing, money is an essential ingredient in the formula for success. Each truck will be built at a cost of several hundred thousand dollars and will have to be rebuilt after each race. Most successful teams bring two to four trucks to each race, entering on or two and holding the replacements in reserve. And the reserve trucks are often needed.

THE TECHNOLOGY OF WINNING

The trucks may be engineered to take the punishment the terrain dishes out, but nothing can take too much for too long.

There are times when standing in the pits is more entertaining than watching the race itself. The trucks roll out perfectly detailed, gleaming technological jewels that are the product of a million dollar developmental effort by a team of 30 designers, machinists, metallurgists, and mechanics. A few laps later they come hobbling back in, splattered with mud, dented by rocks, fenders torn and flapping from contact with barriers or other trucks. The pit crew takes over in an effort to refurbish the truck between heats so the team can continue to race. These are the same white glove technicians who built the truck in the first place, only now they are slamming a dented wheel with a sledge hammer in a frantic effort to bend the wheel back into a round shape, tearing off ripped body parts and unbelting shocks or transmissions that are too hot to touch.

Driving skills are another factor. Finding the fastest line through a corner littered with rocks and dirt piles is more an art than a science. Successful drivers find ways to avoid some obstacles, leap others, and stay on course without overstressing the engine or suspension. Avoiding other trucks is an important skill. Because the trucks are racing fast on a slippery dirt surface, contact between them is frequent—sometimes violent. Passing a knot of slower trucks is risky, especially on a tight course. One truck, forced into a wall or dirt pile, can bounce into another, knocking it into a third truck and tangling up the entire group. Although no one will be injured and damage to the trucks will usually be slight, there is rarely enough time for a bumped truck to get back into the lead.

THE SENSATION OF SPEED

Sitting inside a fast truck is unforgettable, especially to a person who understands how careful driving is required off-road. In an ordinary truck it is easy to roll a truck or get stuck driving across even very smooth terrain. These trucks are different, and that becomes obvious from the first glance inside.

The seat is equipped with a five-point harness that holds driver and passenger so tightly they become part of the truck. Instrumentation is directly in front of the driver and co-driver, demanding attention. Somewhere near the driver is a red button marked "start." Push it and the engine turns over a few times, then roars to life. Once underway, the howl of the engine prevents normal conversation, even shouting is pointless, so driver and passenger communicate by pointing and gesturing. Even this is difficult enough, since the truck is bounding across the ground, subjecting the occupants to a constant bombardment of bumps, thuds and shakes.

The speeds are incredible and astonishing. Some trucks are geared to run at speeds of up to 140 mph across wide open areas, but it's the transition between fast and slow that is impressive. Each race is a series of blazing sprints into the corners, followed by last second, power braking, turning and powering out of the corner, wheels throwing long rooster tails of dirt behind them. This is followed by another blazing sprint into the next corner, sudden braking, and so on.

While it is amazing enough how fast these trucks can accelerate, even more mind boggling is their ability to stop short from high speeds. A passenger inside a fast truck approaching a tight curve will say his prayers three times before the driver even begins to brake. Upon braking, G-forces inside the cabin shift all body weight forward tightly against the harness, and miraculously, the truck slows enough to negotiate the corner, leaving the naive passenger to wonder what happened, knowing only that he survived. This kind of cornering goes on turn after turn, lap after lap, until the race is over or someone makes a mistake.

That's off-road racing. It's fast, it's physical and it's high tech. It takes complete concentration, plus a gifted sense of timing and driving control. One thing is for sure: There's nothing else like it.

See you at the races!

John Stewart
Editor, *Four Wheeler* Magazine

LOADING

Super Off-Road loads and runs automatically. Reset your machine, then follow the instructions for your computer.

Amiga and Atari ST:
Insert disk 1 into drive. Reset your computer.

IBM PC and Compatibles:
Insert disk into drive A (use disk 2 if you have the 5¼" version), and type SETUP. Press 'S' to setup and configure the game on floppy disk, or press 'I' to install the game to hard disk. Move the highlighted bar to the correct settings and press ENTER. When finished, move the bar to CONTINUE and press ENTER. After the Setup or Installation is completed, type IRONMAN to run Super Off-Road.

HARD DISK USERS NOTE: The default for installing onto a hard disk is C:\IRONMAN. If you want to install on a different drive, highlight the 'Install to this Directory' window and press ENTER. Type in the drive and path you wish to install Super Off-Road to. (Example, D:\OFFROAD)

Commodore 64: (128 users type G064 and ENTER first)
Insert disk into drive and type LOAD "*",8,1 then press ENTER.

CONTROLS

All versions can be played by up to three people simultaneously.

Amiga and ST

During the opening demo, F1 turns both music and sound effects on, F2 turns music only on, F3 turns sound effects only on, F4 turns music and sound effects off, while F10 allows you to quit the options section.

Player 1, the red car, uses Joystick Port 1
- Up - accelerate
- Down - brake
- Left - left
- Right - right
- Fire - Nitro

Player 2, the yellow car, uses Joystick Port 0
- Up - accelerate
- Down - brake
- Left - left
- Right - right
- Fire - Nitro

Player 3, the blue car, uses the keyboard
- /, LEFT SHIFT BUTTON, SPACEBAR — ACCELERATE
- QWASZXUIJKM or , - left
- ERDFCVOPL or ; - right
- ALT or RIGHT SHIFT BUTTON - Nitro
- Braking is automatic when the accelerate key is released

During play, HELP pauses the game and ESC aborts a paused game.

IBM PC and Compatibles

Super Off-Road supports the Adlib sound board, if it has been fitted to your PC and a games card is required if you want to take advantage of the three-player option - Player 2 uses a joystick.

Player 1, the red car, used the keyboard
- Q - accelerate
- Z or X - left
- C or V - right
- A - Nitro

Player 2, the yellow car, uses the Joystick Port 1
- Up - accelerate
- Left - left
- Right - right
- Fire - Nitro

Player 3, the blue car, uses the keyboard
-] - accelerate
- M or , - left
- . or / - right
- ' - Nitro

During play, F1 pauses, F2 toggles the sound on or off, F10 aborts a paused game, ALT B accesses the Boss Screen, CTRL S saves the high score chart when it is being displayed and ESC exits to DOS. If the high score table already exits on disk then it will be saved automatically.

C64/128

Player 1, the red car, uses Joystick Port 2
- Up - accelerate
- Down - brake
- Left - left
- Right - right
- Fire - Nitro

Player 2, the yellow car, uses Joystick Port 1
- Up - accelerate
- Down - brake
- Left - left
- Right - right
- Fire - Nitro

Player 3, the blue car, uses the keyboard
- ; - accelerate
- / - brake
- @ - left
- Up Arrow - right
- : - Nitro

During play, RUN/STOP pauses and CLR/HOME aborts a paused game.

HOW TO PLAY SUPER OFF-ROAD

Stadium Racing — The Off-Road Experience

Your aim is simple: to come out as the best off-road driver in a series of stadium-based races. Four drivers, up to three of which can be played by the computer, compete over a series of eight tracks - and each track is raced both clockwise and anti-clockwise, giving 16 race configurations.

Based on the American arcade game "Ivan 'Ironman' Stewart's Super Off-Road," this conversion is faithful to the original, so when you first load the game each player needs to input details that will be used later for the high score and race results screens. First, you need to identify yourself with a three-letter name — use the joystick or keyboard to move the cursor over the letters of the alphabet and click fire to add the selection to your name field.

Next, details of each driver's birth date are needed, according to the customs of competitive off-road racing. The date you input is displayed in the American style — the month preceding the day's date.

Finally, you get the chance to pick a nationality for yourself — move the cursor around the screen and press fire when it is resting on the national flag of your choice.

Once all the players have completed the arcade set-up sequences, the real racing can begin.

Money, Laps, and Lives

At the start of a new season, competitors begin on equal terms — no one has any money in the bank, and everyone has three 'lives' in the form of Credits, which are worth $200,000 dollars. Money can be collected during races; bags of dollars appear on the track every so often; the first person to drive over a Bonus Bag collects the loot it contains. Similarly, containers of Nitro Fuel materialize on the track from time to time — collect them if you can — Nitros usually cost you $10,000 dollars each and can only be purchased before a race starts. The Bonus Nitros you collect during a race can be used immediately, if you want. . .

And Prize money is also an offer, of course.

The moment one driver completes four laps, the current race ends and he is declared the winner. The other three drivers are then automatically ranked according to their positions when the race finished.

Coming first in a race earns you $100,000, 2nd place is worth $90,000, while third place adds $80,000 to your account. Even if your driving skills aren't that impressive, you still collect $70,000 for coming fourth. Watch out for the computer-controlled cars — each player who is beaten by one, loses a Credit.

Points are also awarded at the rate of one point for every $1,000 dollars you win while racing, and are used on the High Score table at the end of the game to determine an overall ranking for the season's competition.

Everyone starts the game with three lives. Being beaten by one of the computer-controlled cars costs you one of your lives.

After each race, the Awards Screen appears and the position of each competing driver is shown, alongside readouts that show the

cash won and the cash collected by picking up Bonus Bags on the track.

If you lose a credit with a credit remaining, a counter starts ticking down and you can opt to continue to play by pressing fire before it reaches zero. If you allow the 'Continue Play?' counter to reach zero, then you are retired from the current game and have to leave the other drivers to chase victory.

Spending Money In The Speed Shop

The Speed Shop menu appears in between races and allows you to spend the cash you have accumulated on the track and by winning races. The display at the top shows how many lives you have (shown as 'credits'), and how much cash you have amassed.

Five useful items are on offer in the Speed Shop, all of which improve the performance of your vehicle. By glancing at the bar readouts in each panel, you can see how many of each of the five accessories has already been fitted to your vehicle.

To go shopping, move the cursor over the panel that shows the accessory you want to buy and press FIRE to make the purchase (if you try to buy an item you can't afford a credit is automatically traded in for $200,000).

When you've bought all you want, select the Next Race panel to move onto the track.

Nitro Fuel Units

You can have up to 99 of these — providing you have collected lots of cash or get really good at picking up the freebies during races. The lap counter panel that is displayed during a race shows how many Nitros each driver has in reserve.

During a race, pressing the FIRE button or Nitro Key uses a Nitro Unit. If you have one — when you punch the Nitro in, you gain a short burst of amazing speed as the high-grade fuel is burned off.

Use Nitros at the start of a race to get ahead of the pack, and whenever you've got a bit of catching up to do!

Tires

You can buy up to five grades of 'Tire.' The higher grade you have, the better your vehicle's grip on the racetrack, the less likely you are to skid, and the vehicle's turn rate is improved.

Shocks

Up to five types of shock absorbers can be fitted to your vehicle — the more you have, the less bouncy the ride. The improved contact of your wheels with the ground gives improved acceleration and cornering.

Acceleration

By careful race-tuning, your vehicle can be made to accelerate up to its top speed more quickly. You're limited to five Acceleration units — each one you buy increases performance.

Top Speed

This accessory boosts the top speed that your vehicle can reach without the aid of Nitro boosters. When you have fitted five Top Speed accessories and five Acceleration units, your truck can't travel faster without Nitros. . .

Learn From Ironman

Keep an eye on the stock of Nitros you have in your vehicle — the race readout that appears on screen shows how many laps each competitor has completed and how many Nitros they have in stock.

Use your Nitros wisely — to get ahead of the pack at the start of a race, or to make up for lost time. And buy plenty — by using Nitro boosts to best effect, it's possible to triple your overall speed during a race.

Keep an eye out for the collectables — Bonus Bags stuffed with cash and Bonus Nitro Containers. The quantity of cash in the bags and the number of Nitros in the containers increases as a race progresses. If you're falling behind the field, it sometimes pays dividends to go for pickups rather than for the best position at the end of a race.

Drive intelligently! The more skillful you are at avoiding the on-track obstacles like ramps, mounds and watersplashes, the quicker you will be able to complete the lap.

Spend money! The number of dollars you earn or collect determines the number of points you are awarded on the High Score Screen, but there's no point in saving cash. Spend out when you get the chance to visit the Speed Shop. . .

Ivan Stewart — and why he's called 'Ironman'

Ivan Stewart, a Californian off-road race specialist, began his career as a competitor in off-road racing in 1971, piloting a Class 1 buggy. His career spans nearly 20 years, and Stewart has been a major contributor to the evolution of the sport in America where he has built up an impressive collection of wins.

What began as a hobby, rapidly grew into a profession as the sport of off-road racing became more popular. In 1983, Stewart joined the Toyota Factory Team and has represented the company ever since, driving an off-road truck in stadium short-course races as well as the long-distance events in which competitors drive for 250 miles nonstop through the deserts of Southwest USA and Mexico.

Ivan Stewart gained his nickname 'Ironman' as a result of competing in these marathon treks through the desert. It takes a certain kind of driver to put up with the relentless pounding that your body takes inside the cab of a truck racing through the desert — and a certain kind of physique to withstand the discomfort of a 250-mile treck through hot and hostile terrain.

From the start of his career, Stewart's capacity for endurance was recognized by his fellow competitors. Each time he won a Baja 500 or Baja 1000 race, held in the heat of Mexico, Stewart received an 'Ironman' award. Mickey Thompson, the man behind the Off-Road Championship Gran Prix Series began referring to Ivan Stewart as 'The Ironman of Off-Road Racing' after he picked up the Drivers' Points Championship in two successive years.

While the tag has been shortened a bit, the title 'Ironman' has stuck. Today, Ivan 'Ironman' Stewart is a well-known sporting personality in America — known not just for his wins, but for his association with the sport and the Toyota factory team.

And after a 20-year career behind the wheel, Ironman is still pushing back the boundaries of off-road achievement. Last year, he secured an overall win in the Mint 400 race in Las Vegas — the first time in the 22-year history of the event that a pickup truck captured the award.

Little wonder then, that the American arcade specialists Leland sought Ironman's assistance and endorsement when they set out to produce a game that captured the thrills of off-road racing. And now you can enjoy Ivan 'Ironman' Stewart's Super Off-Road on your home computer.

But will you end up deserving the accolade: 'Ironman'?

CREDITS

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